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## Advance practice nurses readiness to change assessment methods in parents of obese children

Carolyn Leach  
University of Nevada, Las Vegas

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# **NOTE TO USERS**

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**ADVANCED PRACTICE NURSES READINESS  
TO CHANGE ASSESSMENT METHODS  
IN PARENTS OF OBESE CHILDREN**

**By**

**Carolyn Leach  
Bachelor of Science in Nursing  
University of Wisconsin, Eau Claire  
2003**

**A thesis in partial fulfillment  
of the requirements for the**

**Masters of Science Degree in Nursing  
School of Nursing  
Division of Health Sciences**

**Graduate College  
University of Nevada, Las Vegas  
May 2009**

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**Thesis Approval**  
The Graduate College  
University of Nevada, Las Vegas

March 30, 2009

The Thesis prepared by

Carolyn Leach

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Advanced Practice Nurses Readiness to Change Assessment Methods in  
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is approved in partial fulfillment of the requirements for the degree of

Masters of Science Degree in Nursing

*Examination Committee Chair*

*Examination Committee Member*

*Examination Committee Member*

*Graduate College Faculty Representative*

*Dean of the Graduate College*

## ABSTRACT

### **Advance Practice Nurses Readiness to Change Assessment Methods in Parents of Obese Children**

by

Carolyn Leach

Dr. Patricia Alpert, Thesis Committee Chair  
Assistant Professor of Nursing  
University of Nevada, Las Vegas

The worldwide epidemic of child and adolescent overweight and obesity continues to increase at disturbing rates. Unhealthy dietary practice is one of multiple causative behaviors leading to child and adolescent overweight and obesity. This behavior can contribute to short and long-term health consequences. Parents are modulators in the development of children's dietary behavior practices. It is recommended clinical practice that pediatric nurse practitioners (PNPs) assess readiness to change behavior in parents of overweight or obese children. The components of the Prochaska and DiClemente's Transtheoretical Model (TTM) in correlation with the counseling style of Rollnick, Miller and Butler's methods of Motivational Interviewing (MI) are proven to successfully assist health care providers in their assessment and treatment of patients and families through the stages of behavior change.

The purpose of this study was to examine the use of motivational methods, such as MI by PNPs to assess the readiness of parents of overweight or obese children to

change their family's dietary behaviors, according to the stages of change proposed by the Prochaska and DiClemente TTM.



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## CHAPTER 1

### INTRODUCTION

The World Health Organization (WHO) (2008) reported in 2007 that globally, an estimated 22 million children under the age of 5 years were overweight. This worldwide epidemic continues to increase at disturbing rates. The prevalence of child and adolescent overweight and obesity in the United States steadily increased from the late 1970's to present (Adair, 2008). There are numerous causes linked to the increasing prevalence. The most common causes are unhealthy dietary practices and inadequate levels of physical activity (WHO, 2008). Many times, children and adolescents are too young to understand these specific negative health behaviors can have short and long-term physiological and psychological consequences.

The initiation of dietary and lifestyle patterns and practices takes place during childhood (Jonides, Buschbacher & Barlow, 2002). The growth and availability of fast food restaurants, diets high in fats, limited physical activity and busy lifestyles all contribute to the rise in childhood overweight and obesity. Most children and adolescents rely on their families and society to assist them with food choices and the environment in which they behave and live (WHO, 2008).

Behavior is an essential component of many health risks, including overweight and obesity. Research demonstrates that motivation for behavior change to initiate healthy dietary practices is more likely stimulated by the patient's and family's individual

reasons for change compared to the reasons of the healthcare provider (Miller, Rollnick & Butler, 2008). Motivation as defined by Miller and Rollnick (1991) is “a state of readiness or eagerness to change, which may fluctuate from one time or situation to another” (p. 14).

The Prochaska and DiClemente Transtheoretical Model (TTM) illustrates how change occurs throughout six stages including: pre-contemplation, contemplation, preparation, action, maintenance and relapse. The TTM, particularly the stages of change component, has played a significant role in the development of motivational interviewing (MI) and brief interventions using a motivational approach (Miller & Rollnick, 2002).

MI is a researched method that assists healthcare providers to assess patients’ and families’ readiness to change behavior and guide them through the Prochaska and DiClemente TTM’s six stages to implement a behavior change. If pediatric nurse practitioners (PNPs) are to be successful in the assessment and management of pediatric overweight and obesity, motivational methods such as MI are valuable tools for assessing and implementing change in patients and families to further address this epidemic.

### Problem Statement

Overweight and obese children and adolescents are at risk for numerous negative physiological and psychological health consequences due to their increased weight and unhealthy behaviors. As these overweight and obese children age into adulthood, their obesity can lead to epidemics of diabetes and cardiovascular disease as well as, sleep apnea, orthopedic problems, social rejection and lowered self-esteem among multiple

others (Barlow, Trowbridge, Klish & Dietz, 2002; Burns, Dunn, Brady, Starr & Blosser, 2004).

The Expert Committee, which is made up of representatives from fifteen health professional organizations, including the American Academy of Pediatrics (AAP) and the National Association of Pediatric Nurse Associates and Practitioners (NAPNAP) recommends the assessment of overweight and obese children and adolescents. The three main purposes of the medical history obtained during the assessment are: identification of modifiable lifestyle behaviors, assessment of current and future risks for medical comorbidities and assessment of the patient's and family's readiness to make behavior changes (Krebs, Himes, Jacobson, Nicklas, Guilday & Styne, 2007).

O'Brien, Holubkov and Reis (2004) conducted a retrospective medical record review of all health supervision visits for children 3 months to 16 years of age. In this study, children < 5 years of age were defined as obese if their weight was  $\geq 120\%$  of the 50<sup>th</sup> percentile of weight for height on the CDC 2000 growth chart; children  $\geq 5$  years of age were defined as obese if their body mass index was  $\geq 95^{\text{th}}$  percentile on the CDC 2000 growth chart for age and gender. O'Brien and colleagues (2004) assessed faculty pediatricians, pediatric residents and nurse practitioners ability to identify obese patients in an academic primary care setting. The provider's ability to evaluate and manage their obese patients was also described. Though providers consistently were able to identify obese children they were not consistent with current recommendations.

Self-efficacy is also an important component for diagnosis and effective assessment and management of child and adolescent overweight and obesity. Perrin and colleagues (2005) assessed pediatrician's self-efficacy with the treatment and

management of childhood obesity. Three hundred and fifty-six participants were surveyed, 39% of which believed they could be effective in the treatment of childhood obesity. Only 12% of the respondents reported high self-efficacy with their obesity management (Perrin, Flower, Garrett & Ammerman, 2005).

Multiple research studies support methods such as MI as an effective tool for health care providers to use when assessing and implementing behavior change in patients. Alcohol and drug abuse, asthma, Chronic Obstructive Pulmonary Disease (COPD), hypertension, diabetes, domestic violence, eating disorders and health promotion have been successfully managed with MI to change behavior (Miller et al., 2008). However, as evidenced by lack of researched information, little is known about methods used by PNP's, among other healthcare providers, regarding their assessment of psychological issues such as: the readiness of parents of overweight or obese children to change their family's dietary behaviors (Jonides, Buschbacher & Barlow, 2002).

There is a need to learn more about the methods or approaches PNP's are using to assess the readiness of parents of overweight or obese children to change their family's dietary behavior. These parents require motivation to implement behavior change if they are to realize success in the assessment and management of their child's overweight or obese diagnosis. Once this gap in knowledge about PNP's assessment methods is understood, future research on intervention techniques and methods to improve PNP's compliance with recommended assessment practices for overweight and obese children can be implemented.

## Background and Significance to Nursing

The PNP possesses advanced health assessment, diagnostic and clinical management skills. Directing care and managing the health needs of children and families are areas of concentration for the PNP. A major emphasis in the role of the PNP is a focus on wellness and prevention with their patients and families (Hamric, Spross & Hanson, 2005). PNPs possess vital skills, which can be used to effectively assess stages of readiness of parents of overweight or obese children to change their family's dietary behaviors. The guidance provided by the PNP through motivational methods, such as MI can help parents develop the motivation they require to transition through the stages of change for successful treatment and management of their overweight or obese children.

## Purpose of Study

The purpose of this study is to examine the use of motivational methods, such as MI by PNPs to assess the readiness of parents of overweight or obese children to change their family's dietary behaviors, according to the stages of change proposed by the Prochaska and DiClemente TTM. The current study also explores techniques and methods that PNPs use, beyond motivational methods, to assess the readiness of parents of overweight or obese children to change their family's dietary behaviors.



## CHAPTER 2

### REVIEW OF RELATED LITERATURE

#### Search and Review Process

The literature review was conducted on hundreds of health science related articles and books covering a time period of 25 years, ranging from 1983 to 2008. Criteria for this literature review included peer-reviewed empirical studies, which addressed childhood overweight, and obesity and any combination of the following topics: assessment; effects; barriers; motivation and behavior change. Exclusion criteria included letters to the editor and reviews. With the hundreds of articles and books examined, 38 met the criteria.

Documents were retrieved through the University of Nevada, Las Vegas subscriptions to research databases: Academic Search Premier; SCOPUS; CINAHL and Medline. In addition to research databases, hard copies of books were obtained from the University of Nevada, Las Vegas library. Literature from the Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO), the American Academy of Pediatrics (AAP) and the American Medical Association (AMA) was obtained through their websites.

The following words, both individually and together, were typed into the search engines to retrieve articles: childhood; child; adolescent; obesity; overweight; classification; assessment; recommendations; barriers; management; prevalence; perceptions; parents; families; healthcare providers; pediatric nurse practitioners; primary

care providers; behavior; change; stages of change; readiness; motivation; motivational interviewing; the Transtheoretical Model; epidemic; prevention; physiological; psychological and effects.

Literature on the prevalence of child and adolescent overweight and obesity worldwide and specifically in the United States, along with the current recommended assessment by primary care providers is examined and discussed. Literature on barriers and perceptions of assessment of child and adolescent overweight and obesity is reviewed. Published research studies on the effective use of MI and the TTM to assess readiness for behavior change in the health care setting are also examined and discussed.

### The Prevalence of Child and Adolescent Overweight and Obesity

The WHO (2008) reported in 2007 that globally, an estimated 22 million children under the age of 5 years were overweight. The prevalence of this worldwide epidemic continues to increase at disturbing rates. There are numerous reasons linked to the increasing prevalence. The most commonly discussed reasons are unhealthy diet and inadequate levels of physical activity. Children and adolescents are often too young to understand that these negative health behaviors can have both short and long-term health consequences. Most children and adolescents rely on their families and society to assist them with food choices they make and improvement of the environment in which they behave and live (WHO, 2008).

The Centers for Disease Control and Prevention (CDC) define *overweight* as a body mass index (BMI)  $\geq$  to the age and gender specific 95<sup>th</sup> percentile on the CDC 2000

growth chart for 2 to 20 year olds (2007). The CDC define *at risk for overweight* as a BMI  $\geq$  to the age and gender specific 85<sup>th</sup> percentile, but  $<$  the 95<sup>th</sup> percentile on the CDC 2000 growth chart for 2 to 20 year olds (2007). The CDC 2000 growth charts are displayed in Appendix A (p. 54-57).

The prevalence of child and adolescent overweight and obesity in the United States has steadily increased in the last three decades (Adair, 2008). The National Health and Nutrition Examination Survey's (NHANES) data from the 1971–1974 report compared to data from the 2003–2004 report shows increases in overweight among all age groups from 2-19 years of age. Specifically among toddler and preschooler children, aged 2–5 years, the prevalence of overweight increased from 5.0% to 13.9%. Among school-aged children, aged 6–11 years, the prevalence of overweight increased from 4.0% to 18.8%, and among adolescents, aged 12–19 years, the prevalence of overweight increased from 6.1% to 17.4% (CDC, 2007).

In 2007, the Expert Committee on the Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obesity released updated recommendations for the management of overweight and obese children. The committee is made up of representatives from fifteen health professional organizations, including the AAP and the NAPNAP. To stress the urgency behind childhood overweight and obesity, the Expert Committee's new recommendations define obesity as a BMI  $\geq 30 \text{ kg/m}^2$  or  $\geq$  to the 95<sup>th</sup> percentile on the CDC growth chart for children and adolescents ages 2 to 18 (AMA, 2007; Krebs et al., 2007). The Expert Committee defines children and adolescents between the ages of 2 to 18 years with a BMI  $\geq 30 \text{ kg/m}^2$  or  $\geq 85^{\text{th}}$  percentile, but  $< 95^{\text{th}}$  percentile on the CDC 2000 growth chart (whichever is smaller) as overweight (Krebs et

al., 2007). This literature review will use terms and definitions that correspond with the specific use determined by each individual researcher as referenced in their article.

The diagnosis of child and adolescent overweight and obesity can have both short and long-term physiological and psychological health consequences. Physiological consequences include obstructive sleep apnea, asthma, insulin resistance, type II diabetes mellitus, gallstones, hypertension, hepatic steatosis, polycystic ovarian syndrome, slipped capital femoral epiphysis, Blount disease and dyslipidemia (CDC, 2007; Kliegman, Behrman, Jenson & Stanton, 2007). The Bogalusa Heart Study detected that children with a BMI above the 85<sup>th</sup> percentile were more likely to hypercholesterolemia, hypertriglyceridemia, or hypertension than other children (Kliegman et al., 2007). Also a higher prevalence of hypertension occurs in overweight children independent of race, sex and age. Metabolic syndrome, which is composed of hypertension, glucose intolerance, hypertriglyceridemia, decreased high-density lipoprotein level (HDL) and abdominal central obesity bestows an excessively high risk of cardiovascular disease. The overall prevalence of metabolic syndrome in adolescents is 4%; the prevalence increases to 30% in overweight adolescents (Kliegman et al., 2007).

Young-Hyman and colleagues (2006) found psychological effects of children with increased weight. Their research showed regardless of race or sex, increasing weight was associated with emotional and weight-related distress in children. The CDC (2007) also mentions that overweight children and adolescents are subject to early and methodical social discrimination. This in turn can create low self-esteem, which has potentially negative lifelong effects.

Although the negative physiological and psychological health consequences of

overweight and obesity can greatly affect children and adolescents, major concerns are focused on the long-term complications. Obesity during childhood and adolescence is associated with an increased risk of obesity during adulthood, accompanied by the long-term health risks that coincide with overweight and obesity. Individuals 18 years of age with a BMI at or above the 95th percentile have a 66-78% risk of being overweight at age 35 years. Adolescent obesity has been correlated with increased morbidity and mortality in adulthood. The increased risk is more pronounced for adolescent males with moderate to severe obesity (Schwarz & Freemark, 2007). The Harvard Growth Study exhibited a doubling of the death rate from cardiovascular disease in males who were overweight during adolescence (Kliegman et al., 2007). Also the increase in the prevalence of type 2 diabetes in adolescents with obesity is linked to diabetic related complications in adulthood. Along with the physiological affects, psychological affects in overweight or obese adults are prevalent. One study of overweight females tracked from adolescents to young adulthood were found to have completed less schooling, were less likely to have married and had higher rates of household poverty compared to their non-overweight peers (Schwarz & Freemark, 2007).

#### Current Recommended Assessment of Child and Adolescent Overweight and Obesity

The assessment of child and adolescent overweight and obesity is based on the current Expert Committee recommendations. They suggest at a minimum, performing a yearly assessment of weight status in all children and adolescents along with a thorough physical examination (AMA, 2007; Krebs et al., 2007). The anthropometric methods to

determine BMI for age and gender should be plotted on a standard growth chart.

Classification of *obese* or *overweight* as displayed in Appendix A (p. 52), is based on the previously discussed Expert Committee definitions.

The three main purposes of the medical history obtained during the assessment consist of: identification of modifiable lifestyle behaviors, assessment of current and future risks for medical comorbidities and assessment of the patient's and family's readiness to make behavior changes. If a child or adolescent is identified as *overweight* or *obese* specific laboratory tests (See Appendix A, p. 53) should be obtained (AMA, 2007; Krebs et al., 2007).

### Barriers to the Assessment and Management of Child and Adolescent Overweight and Obesity

There are many barriers identified in the assessment and management of child and adolescent obesity. Story and colleagues (2002) mailed an 8-page questionnaire on the topic of child and adolescent obesity to 444 registered dietitians (RD) of the American Dietetic Association (ADA), 202 members of the AAP and 293 members of the NAPNAP. The primary goal of the study was to evaluate healthcare professionals attitudes, perceived skill level, perceived barriers and training needs in the management of child and adolescent obesity. The majority of the respondents agreed that childhood obesity needs treatment, that it leads to chronic disease risk and disrupts future quality of life. The PNs and pediatricians overall had a less optimistic viewpoint than the RDs on the topic of child and adolescent obesity and were more likely to perceive barriers to current treatment practices. The most frequent barriers identified by all practitioners were

lack of patient motivation, lack of parent involvement and lack of support services. On the topic of perceived skill level and training needs, the most common areas of self-perceived low proficiency were in the use of behavioral management strategies, guidance in parenting techniques, and addressing family conflicts. RDs were less likely to cite low proficiency in behavioral management, but more likely to identify low proficiency in addressing family conflicts and providing guidance in parenting techniques when compared with PNP's and pediatricians. All 3 groups expressed high interest in additional training for all of the skill areas with over half of the respondents expressing interest in the use of behavioral management strategies and parenting techniques (Story et al., 2002).

In addition to frequently identified assessment and management barriers, research studies in recent years have shown a lack of consistency with Expert Committee recommendations. The Expert Committee currently recommends at each well-child visit that health care providers assess self-efficacy and stages of change related to dietary and physical activity practices in overweight and obese children and their families (AMA, 2007). The methods of motivational interviewing, along with the framework of the TTM are recommended patient and family centered counseling approaches to be used while assessing dietary and physical activity practices of overweight and obese children and their families (Barlow, 2007). Research studies such as O'Brien and colleagues (2004) illustrated the lack of consistency with current recommendations for identification, evaluation and management of childhood obesity by nurse practitioners, pediatric residents and faculty pediatricians at an academic primary care setting. In addition, a study looking at awareness of the current recommendations for the assessment and

treatment of pediatric overweight, only had 25.1% of nurse practitioners, pediatricians and family physicians in Massachusetts report awareness of the published Expert Committee recommendations (Rhodes et al., 2007).

Self-efficacy is also a barrier to effective prevention, treatment and management of childhood obesity. Perrin and colleagues (2005) evaluated pediatrician's self-efficacy in the prevention, treatment and management of childhood obesity. Although 39% of respondents believed physicians could be effective in the prevention, treatment and management of childhood obesity, only 12% reported high self-efficacy related to their obesity management.

Environmental factors, parental habits and unhealthy lifestyles strongly impede successful assessment and management of childhood obesity. The vast availability of unhealthy fast foods has become an easy alternative to healthier choices because of the busy lifestyles that many American families are living. Children and adolescents also have higher rates of inactivity (O'Brien et al., 2004). Both poor dietary habits and inactivity can contribute to increased weight gain.

Families are instrumental in molding children's relationships with food. Child and adolescent obesity has been shown to occur within the context of family life (Jackson, McDonald, Mannix, Faga & Firtko, 2005). Adverse outcomes with children's eating patterns have been linked to parental attitudes, particularly, over-controlling and under-controlling attitudes. Childhood is the time when dietary and lifestyle habits are initiated and children often model behaviors of their parents and families (Jonides et al., 2002).

Jackson and colleagues (2005) described that mothers have the largest influence on quantity, nature and variety of food available for their young children. The topics



examined were: 1) the length of time the mothers perceived their child as having a weight problem; 2) identified the catalyst for their concerns; and 3) discovered the mother's perception of causative factors. The results of the study found that mothers were concerned with their child's weight and were aware of social consequences of obesity in children, but were less aware of physical consequences of obesity. They concluded, the mothers' perceived causative factors of obesity are important to effectively assess and implement behavior changes.

Maynard, Galuska, Blanck and Serdula (2003), utilized data from the third National Health and Nutrition Examination Survey (NHANES III) to assess maternal perceptions of their child's weight status compared with their child's BMI measurements. The sample included 5,500 children ranging in age from 2-11, along with maternal interview data. Nearly one-third (32.1%) of mothers misclassified their overweight child as "about the right weight" or within the normal range category. For children at risk of being overweight (defined in this study as BMI  $\geq$  85<sup>th</sup> percentile but  $<$  95<sup>th</sup> percentile), only 14% reported their sons to be overweight compared to 29% of daughters.

Although maternal perceptions are highly identified in the assessment, treatment and management of obese children and adolescents, Huang et al. (2007), examined parents' weight perceptions of their children compared to unrelated children. In this study, photograph questionnaires were shown to assess unrelated children's status. Heights and weights were assessed in both parents and children and BMI was also calculated. Of the 1098 parents surveyed 70% were overweight or obese themselves and 39% of their children were at risk for overweight or overweight. Correct identification of their child's weight status was performed by 61% of parents and 58% of the parents

correctly identified weight status of unrelated children using the photographs. They concluded that parental assessment of their child's weight status is not related to their ability to accurately assess the weight status of unrelated children. The demonstrated lack of use of subjective weight criteria to the parent's own children may reflect denial or unwillingness to accept their children's weight status. The parents may also use different criteria to define overweight status or health concerns for their children. This study showed that parental perceptions of children's weight are influenced by the child's individual characteristics and these perceptions are crucial for the management of childhood obesity. Accurate parental recognition of overweight status and associated health risks coincides with readiness of parents to change lifestyle behaviors that impact their child's weight (Huang et al., 2007).

### Motivational Interviewing and its Effectiveness with Assessment of Behavior Change in the Health Care Setting

MI is described as "a directive, client-centered counseling style for eliciting behavior change by helping clients to explore and resolve ambivalence" (Rollnick & Miller, 1995, p. 325). William R. Miller first described the clinical method of MI in 1983. Initially, it was developed as a brief intervention for problem drinkers. In the 1990's MI was tested and researched with other health problems, particularly chronic diseases such as: alcohol and drug abuse, asthma, COPD, eating disorders, obesity, cardiovascular disease, diabetes and hypertension (Miller & Rollnick, 2002; Miller et al., 2008). Even though MI is shown to be effective with diet and physical activity through behavior

modifications in adult obesity, the methods of MI are just beginning to emerge in the treatment and prevention of childhood obesity (Davis et al., 2007).

MI carries a tone that is nonjudgmental, empathetic and encouraging. The approach is different than many other counseling styles because it relies on patients themselves to do much of the psychological work versus the healthcare provider. There are special methods and strategies that help assist with the process of MI. Reflective listening is a major method that is used in MI. The crucial element of reflective listening is how the interviewer responds to what the patient says (Davis et al., 2007; Miller & Rollnick, 2002). The assumption of MI is that motivation has a greater influence on behavior change than information (Davis et al., 2007).

The basic four guiding principles of MI can be described using the acronym RULE: 1) resist the righting reflex; 2) understand and explore the patient's own motivations; 3) listen with empathy; and 4) empower the patient, encouraging hope and optimism (Rollnick et al., 2008). The principles of MI explore reflective listening, ambivalence, reinforcement of positive behavior and rolling with resistance. The use of MI in a family-centered collaborative model improves behavior change compared to authoritarian healthcare practices (Gance-Cleveland, 2007) The overall goal of MI is to increase the patient's intrinsic motivation, so that change occurs from within rather than being forced from outside (Miller & Rollnick, 1991).

The assessment is a way to determine what problems need to be addressed and the best way to begin. Initial provider assessments are key in determining appropriate individualized plans for change (Miller & Rollnick, 1991). The provider's role in MI during assessment is to promote an environment that is conducive to change. The Expert

Committee recommends using motivational interviewing methods to help guide the healthcare providers assessment. Questions used during the assessment can include: nondirective questions, “Your child’s weight is above the 95%. What concerns, if any do you have about her weight?” or confidence and importance scale questions, “On a scale from 0-10 how confident are you at changing your families dietary behaviors?” The next step of the healthcare provider depends on the response of the patient or parent (Barlow, 2007).

There are two major MI approaches on how patient’s motivation is assessed. The first focused approach is on the patient’s perceived benefits versus harm from the present behavior. The other focus is the exploration of the patient’s readiness for change. Several concepts can be involved in the assessment of the patients’ readiness to change. These concepts can include: 1) the patient’s judgment of the need for change; 2) the individual’s self-efficacy for change; 3) the perceived possibility of change taking place; and 4) the patient’s stated intention for future change within a designated time period. The Prochaska and DiClemente TTM provides a context for providers to assess the readiness to change stage of their patients and families (Appendix B) (Miller & Rollnick, 1991).

Channon and colleagues (2007) examined the efficacy of MI with type 1 diabetic adolescents 14 to 17 years of age. Sixty- six participants were obtained from diabetic clinics in South Wales, U.K. and randomly assigned to an intervention group or control group in the clinic setting. The adolescents in the intervention group received MI and the control group received support visits. The focus of the intervention sessions included awareness building, alternatives to behaviors, problem solving, making choices, goal setting and avoidance of confrontation. At the end of the 12-month intervention the mean

hemoglobin A1C in the intervention group was considerably lower than in the control group and at 24 months the differences were maintained. The results showed a difference in hemoglobin A1C of  $-0.5 \pm 1.81$  at 12 months and  $-0.4 \pm 1.73$  at 24 months. This study demonstrates that MI is an effective method for behavior change in adolescents with type 1 diabetes, using hemoglobin A1C as the endpoint (Channon et al., 2007).

Schwartz and colleagues (2007) studied pediatricians and dietitians executing office-based obesity primary prevention programs using MI. The sample consisted of ninety-one children between the ages of 3 to 7 years old that were overweight (with BMIs 85<sup>th</sup> but < 95<sup>th</sup> percentile for age) or a normal weight accompanied with a parent with BMIs  $\geq 30$ . There were 15 pediatricians and 5 dietitians who participated and were assigned to 1 of 3 groups: 1) control; 2) minimal intervention (pediatrician only); or 3) intensive intervention (pediatrician and registered dietitian). The pediatricians and registered dietitians participated in a 2-day MI training session before the intervention. Parents of children in the minimal intervention group received 1 MI session from the pediatrician, and parents in the intensive group received 2 MI sessions each from the pediatrician and the registered dietitian. At 6 month follow up the reduction of BMIs observed were 0.6, 1.9, and 2.6 body mass index percentiles respectively for the three groups. Although the results for all 3 groups were not statistically significant, this study did suggest that MI might be a promising office-based strategy for childhood obesity prevention (Schwartz et. al., 2007).

## The Use of the Transtheoretical Model with Obesity Assessment and Management

To positively influence the childhood obesity epidemic, effective multiple behavior interventions concentrated on physical activity, diet and sedentary behavior are necessary. The TTM accounts for varying degrees of readiness to change, which makes it an acceptable framework for assessing and intervening with these multiple at risk behaviors (Driskell, Dymont, Mauriello, Castle & Sherman, 2008). The TTM is centrally organized by the stages of change structure, along with other paradigms that include decisional balance, processes of change and self-efficacy (Johnson, 2008).

In response to the low proficiency reported by PNP's related to their pediatric obesity prevention and treatment methods, NAPNAP created evidenced-based Healthy Eating and Activity Together (HEAT) clinical practice guidelines to improve provider efficacy and behavior (Gance-Cleveland, Sidora-Arcoleo, Keesing, Gottesman & Brady, in press). A component of the assessment checklist within these guidelines includes the psychosocial assessment of readiness for change. Gottesman (2003) communicates how assessing readiness to change within the context of the TTM is a key to success with implementation of the HEAT guidelines.

Rhee and colleagues (2005) discuss how behavior modification weight management programs that include parents, especially mothers, have more success than those that do not include parents. They also discuss how assessing parent's readiness to make lifestyle and dietary changes within the context of the TTM, in combination with these weight management programs can be an important step toward helping children lose weight. A 43-item self-administered questionnaire was distributed to 151 parents of

children 2 to 12 years of age who had a BMI  $\geq$  85<sup>th</sup> percentile for age and gender. The outcome of the questionnaire was the parent's stage of change determined by an algorithm involving current parental practices and future intentions. The results displayed that personal perceptions such as, believing their child's weight or their own weight was above average and demographic factors such as, age of the child, were associated with parent's readiness to change stage. It was discussed that this information can be beneficial for providers when addressing pediatric overweight and obesity with parents and initiating interventions.

Driskell and colleagues (2008) examined the interrelationships of physical activity, fruit and vegetable consumption, and limiting television time among elementary, middle and high school students. A nationwide, self-administered questionnaire assessing TTM constructs and behavioral indicators for physical activity, fruit and vegetable consumption, and limiting television time was given to a sample of 4091 students in grades 4 through 12. The results showed that being at-risk for one behavior almost always increased the odds of being at-risk for another behavior. There was also a progressive, unhealthy trend of behaviors from elementary to high school, which signifies the need for prevention, early assessment and early intervention. The results of this study support the need for a multiple behavior assessment and intervention approach, such as the TTM.

Johnson and colleagues (2008) studied the effectiveness of a TTM based multiple behavior intervention for weight management in adults. A sample of 1277 overweight or obese adults (BMI 25-39) were randomized and assigned to a no-treatment control group or a group that was a home-based. The home-based group was stage-matched with

multiple behavior interventions for up to three behaviors related to weight management at 0,3,6 and 9 months. These behaviors included: healthy eating, exercise and managing emotional distress. Then participants were re-assessed at 6, 12, and 24 months. There were differences on weight lost at 24 months between the two groups. In the treatment group the co-variation of behavior change occurred and was much more pronounced. The results also showed that the multiple behavior interventions were more than three times that of single behavior interventions. This study demonstrates that TTM based multiple behavior interventions impact healthy eating, exercise and managing emotional distress, which improves weight loss in overweight and obese adults.



## CHAPTER 3

### CONCEPTUAL FRAMEWORK

The theoretical foundation of this study is presented and discussed in this chapter. Research questions, hypotheses and definitions developed from the components of this theory are also presented and described.

The Prochaska and DiClemente TTM was developed in the early 1980's to provide a better understanding of the process of behavior change. The stages of change symbolize a significant component of the TTM. The concept of the TTM is that behavior change involves a process that occurs in stages and involves specific and varied tasks (Prochaska & DiClemente, 1983).

There are six stages in this model that one progresses through in an effort to change behavior. The six stages include: precontemplation, contemplation, preparation, action, maintenance and relapse. If success is achieved with the initial stages of precontemplation and contemplation it leads to the stages of preparation and action. The last stages include: the maintenance stage, where the patient maintains and sustains the behavior change; and the relapse stage, which is often a normal occurrence in the process of behavior change. The stages can be visualized in a wheel or a circle format (See Appendix B). This circle format signifies that it is normal for a person to go through cycles of behavior change and the normal occurrence of relapse several times before established change is made (Miller & Rollnick, 1991).

This study focuses on PNP's use of motivational methods to assess the readiness of parents of overweight or obese children to change their family's dietary behaviors. For the purpose of this study, methods that assess the stages of precontemplation and contemplation are emphasized. In the precontemplation stage the patient is either unaware of the problem behavior or unwilling to change the problem behavior. Patients in this stage are not sure yet that the negative aspects of the problem behavior outweigh the positive aspects. The patients in the precontemplation stage are often labeled as resistant. The goal of the provider when working with patients in the precontemplation stage is to assess why they are resistant to change and to diffuse that resistance in a positive way (Miller & Rollnick, 2002).

In the contemplation stage the patients are able to acknowledge that there is a problem and they are thinking seriously about changing or solving the problem. There are often misconceptions that individuals in the contemplation stage are ready to commit to change. The contemplation stage is actually where patients experience the most ambivalence and they may spend months to years in the contemplation stage before they are ready to move to the determination or action stage. The goal of the provider in this stage is to recognize ambivalence and help tilt the patient towards changing the behavior. It is also important to assess how long the patient has been considering change and if past attempts have been made. The provider can help assist the patient by discussing the risks versus benefits of the behavior and by providing encouragement about the possibility of change (Miller & Rollnick, 2002).

Motivation is the essential component needed to help patients and families through the stages of change to successfully accomplish behavior change. It has been

shown that the methods of MI have a significant relationship to the stages of change within the TTM, in particular to the precontemplation and contemplation stages. People in the precontemplation and contemplation stage react well to the methods of MI because it is a nonthreatening and supportive approach to change (Miller & Rollnick, 2002). When assessing patients, the methods of MI help providers guide patients to reflect and take responsibility for their particular situation, which in turn helps motivate patients to change.

### Research Questions

Based on the components of the Prochaska and DiClemente TTM in correlation with the counseling style of Rollnick, Miller and Butler's methods of MI, the present study will attempt to answer the following research questions:

1. Do pediatric nurse practitioners assess the readiness of parents of overweight or obese children to change their family's dietary behaviors?
2. Do pediatric nurse practitioners use validated motivational methods such as "motivational interviewing" to assess the readiness of parents of overweight or obese children to change their family's dietary behaviors?
3. Do pediatric nurse practitioners use methods other than motivational methods to assess the readiness of parents of overweight or obese children to change their family's dietary behaviors?

## Definitions

To provide clarity and make explicit the meaning of key terms used in this thesis, they are operationally defined below.

1. *Parent* is defined as the primary caregiver of an overweight or obese child.
2. *Children* will be limited to an overweight or obese individual between two to eighteen years of age that the PNP cares for in a primary care setting.
3. *Pediatric Nurse Practitioners* are defined by NAPNAP (2008) as “very special health care providers who are dedicated to improving children's health. PNP's have advanced education in pediatric nursing and health care and they serve children and families in an extensive range of practice settings.” For the purpose of this study the term “PNPs” will refer to advanced practice registered nurses who specialize in pediatrics and are licensed health care providers in a primary care setting.
4. *Motivational Interviewing* is described as “a directive, client-centered counseling style for eliciting behavior change by helping clients to explore and resolve ambivalence” (Miller, Rollnick & Butler, 2008). For the purpose of this study the methods of MI will be limited to its basic principles, of RULE (See literature review section).
5. *Motivation* is defined as a state of readiness or eagerness to change, which may fluctuate from one time or situation to another (Miller & Rollnick, 1991).
6. *Motivational methods* are identified and used by the PNP as specific strategies, which have been demonstrated in literature to be efficacious in motivating patients to change behavior.
7. *Other methods or techniques used to assess parental readiness to change* are methods such as but not limited to: resource lists, brochures and non-validated approaches as

means the PNP uses to assess the readiness of parents of overweight or obese children to change their family's dietary behaviors.

### Assumptions

For the purpose of this study the following statements are assumed to be correct:

1. Study participants will answer questions truthfully.
2. It is a standard of nursing practice that PNPs intervene with parents who have children who are overweight or obese.
3. Parents in the precontemplation stage of the Prochaska and DiClemente TTM are unaware that their child or adolescent is overweight or obese or they are unwilling to change their problem behavior.
4. Parents in the contemplation stage of the Prochaska and DiClemente TTM perceive that their child or adolescent is overweight or obese and have been thinking of moving into the preparation/action stage within the next 6 months.

## CHAPTER 4

### METHODOLOGY

This descriptive cross-sectional study examined the methods PNs use to assess the readiness of parents of overweight or obese children to change their family's dietary behaviors. Data collection began after endorsement by the Thesis Committee members and approval from the University of Nevada, Las Vegas Institutional Review Board (IRB) Behavioral Sciences Committee. The methodology conducted for this study is described below.

#### Setting and Design

A descriptive cross-sectional design examined the methods PNs use to assess the readiness of parents of overweight or obese children to change their family's dietary behaviors. A descriptive survey is a noninvasive, non-experimental way of obtaining information from PNs regarding their readiness to change assessment methods. The survey questionnaire of self-reported data was distributed by bulk mailing and returned by fax from PNs working in primary care settings throughout the United States. A detailed description of how the process was carried out is contained within the following procedure section.

## Power Analysis

The Survey System (2008), an online sample size calculator was used for calculating the necessary sample size for the study. Utilizing the total population size of 6,000 PNPs and setting a confidence level of 95%, a confidence interval of 5 and a percentage of 50,  $N = 361$ . Oversampling with a total of 600 participants was deemed sufficient to assure an adequate sample size for statistical significance.

## Sample

The sample was drawn from a mailing list purchased from the NAPNAP. A random sampling design was implemented using the Statistical Package for the Social Sciences (SPSS), Version 16.0 software program, which randomized the 6,000 names merged from the NAPNAP Excel spreadsheet. The SPSS Version 16.0 data select cases program randomized exactly 600 names from the 6,000 total names after the information was specifically entered.

### Inclusion criteria:

- a. Licensed male or female PNP.
- b. Currently practicing in a primary care setting as a PNP.
- c. Member of the National Association of Pediatric Nurse Practitioners
- d. Able to read and write English.
- e. Willing to participate.

### Exclusion criteria:

- a. Retired or unemployed PNPs, members of NAPNAP practicing as registered nurses or PNP students.

b. PNP's not currently practicing or practicing as a registered nurse.

### Procedure

The consent and survey questionnaires were distributed by bulk mailing to 600 randomly selected PNPs from a PNP mailing list purchased by NAPNAP. The mailings occurred over the course of one month starting in December 2008 through January 2009. The participants had two weeks to complete and fax the survey questionnaire to the PI and SI. The completed and fax returned survey questionnaires signified consent. In order to contain the cost for this study, the participants were directed to fax the survey questionnaire back to the PI and SI using the following fax number: (702) 895-4807. The fax returned surveys were anonymous and identifying factors such as name, and specific office of practice were not included in the returned survey. Any identifying information sent by fax (i.e. cover sheets) were shredded or concealed with white out. All returned surveys were locked in a cabinet in the PI's office within the University of Nevada, Las Vegas School of Nursing, after the survey data was entered into the database. The surveys will be kept for a total of three years after which time they will be destroyed. Only the PI and SI were allowed access to the returned surveys.

### Instrumentation

The instrument is a 27-question survey (see Appendix E). For the purpose of this study, the SI developed questions 16-27 were analyzed and reported. The instrument was used to collect the following data:



1. Demographic data was collected on age, practice settings, number of patients seen per day, provider height and weight, ethnicity and years in practice as a pediatric nurse practitioner. It is anticipated that younger PNPs or those completing their degree program within the last 5 years, in addition to those PNP's with BMIs within normal ranges are more likely to say they use motivational methods to assess willingness to change behavior.
2. Research data was collected using the SI developed instrument, *Pediatric Nurse Practitioners Willingness to Change Assessment Methods in Parents of Overweight or Obese Children* survey questionnaire. Since the SI developed this instrument, it was assessed for content validity before the survey questionnaire was distributed. To ensure instrument content validity, the survey questionnaire was sent via email to nine experts in the field of childhood obesity, MI and TTM. Specific instructions along with an evaluation tool were provided to the experts for evaluating each item individually and the instrument as a whole (See Appendix F). Of the nine, a total of three experts responded, one from each of the fields of childhood obesity, MI and TTM. Once the expert suggested changes were made, the entire survey was sent via email to five PNP childhood obesity experts to evaluate the newly developed tool for overall readability. Of the five, two PNP experts in childhood obesity responded. The PNP childhood obesity experts suggested changes were made regarding overall readability before the survey was distributed.

## Data Analysis

Content analysis was used to analyze common themes given by participant responses to the open ended questions. Data entry and analyses was utilized using the Statistical Package for the Social Sciences (SPSS), Version 16.0 software program. Frequency distributions and percent distributions were performed for the following variables: demographic data and quantitative questions on the survey questionnaire. Chi-Square tests were used to compare quantitative question responses with the demographic data.

Research question one was answered by question 16 on the *Pediatric Nurse Practitioners Willingness to Change Assessment Methods in Parents of Overweight or Obese Children* survey questionnaire. The second research question was answered by question 17 on the survey questionnaire. The third research question was answered by question 17 on the survey questionnaire.

## CHAPTER 5

### FINDINGS

The PNP's assessment findings on the readiness of parents of overweight or obese children to change their family's dietary behaviors is summarized and explained within this chapter. Participant's demographic information is described, followed by the statistical analysis of the qualitative and quantitative survey questionnaire responses and their relationship to each of the three research questions. The Statistical Package for the Social Sciences (SPSS), version 16 software program was used to analyze the data.

#### Sample Description

The consent and survey questionnaires were distributed by bulk mailing to 600 randomly selected PNPs from a PNP mailing list purchased from NAPNAP. The mailings occurred over the course of one month starting in December 2008 through January 2009. A total of 38 complete and 13 incomplete survey questionnaires were returned via fax to the University of Nevada, Las Vegas School of Nursing. The 13 incomplete survey questionnaires were faxed back containing only one side from each of the 3 double-sided pages sent. The total number of valid survey questionnaires reflected in the results is 38 (N= 38).

Two participants were family nurse practitioners (FNP) practicing in pediatric health care settings and the remaining 36 participants were PNPs. A little over half of the

participants were in the age range of 46-55 years (52.6%, n=20). The other age ranges included 22-35 years (13.2%, n=5), 36-45 years (10.5%, n=4) and 56 and older (23.7%, n=9). The most common practice setting was private practice (44.7%, n=17). The next most common area was a community health facility (23.7%, n=9), followed by the other category (23.7%, n=9). Practice settings listed in the other category included: local university, HMO clinic, hospital-based clinic, children's hospital-based outpatient clinic, residential psychiatric facility, rural clinic, Shriner's Pediatric hospital and a Spina Bifida specialty outpatient clinic. Two of the nine participants in the other category listed their role versus their practice setting, which included a school nurse (consultant role) and a nurse manager at a clinic. The remaining practice settings included government facilities (5.3%, n=2) and school-based clinic (2.6%, n=1).

Of the 38 participants, 37 listed how many patients they see per day. Some participants circled one of the set numbers listed and others independently listed a numbered range of patients per day. These responses were placed into grouped categories. However, there were three ranged responses that were listed, which were not able to fit into the grouped categories. These ranged responses included 8-12 (2.6%, n=1), 0-15 (2.6%, n=1) and 15-25 patients per day (5.3%, n=2). Within the other groups, the highest was the 20-25 patients per day (31.6%, n=12). Next was the greater than 25 patients per day (23.7%, n=9). Followed by the 10-20 patients per day (15.8%, n=6) and the 0-10 patients per day (13.2%, n=5).

Height and weight were listed for 37 of the 38 participants. From this information BMI was calculated for each participant. Data was organized within the following categories: less than 18.5 (underweight), 18.5 to 25 (normal weight), 25 to 30

(overweight) and greater than 30 (obese). The majority of the participants fell into the 18.5 to 25 category (65.8%, n=25), followed by the 25-30 category (26.3%, n=10). The less than 18.5 (2.6%, n=1) and greater than 30 (2.6%, n=1) categories each contained an equal number of participants.

The majority of the participant's ethnicity was Caucasian (94.7%, n=36), followed by an equal number of participants in the African American (2.6%, n=1) and Asian (2.6%, n=1) categories. The length of years in practice varied. This topic was lead by the 11-20 years category (31.6%, n=12), followed by the 6-10 years (28.9%, n=11) and greater than 25 years (21.1%, n=8) categories. The 1-5 years (7.9%, n=3) and 21-25 years (10.5%, n=4) categories had an equal number of participant responses.

Of the 38 participants, 37 provided a clear response to what percentage of children and adolescents are considered overweight (BMI percentile  $\geq$  85%, but  $<$  95% on the CDC 2000 growth chart) in their practice. The responses were organized into categories for an understandable depiction of the frequencies. One participant was unsure (2.6%, n=1), but the majority of participants responded seeing between 0-25% (57.9%, n=22) overweight patients in their practice. Next highest ranges were 26-50% (36.8%, n=14) and 51-75% (2.6%, n=1). No participants saw greater than 75% of children or adolescents that were overweight.

In response to what percentage of children and adolescents are considered obese (BMI percentile  $\geq$  95% on the CDC 2000 growth chart) in their practice, again 37 of the 38 participants provided a clear response. The responses were also organized into categories for an understandable depiction of the frequencies. One participant was unsure (2.6%, n=1), but the majority of participants responded seeing between 0-25% (89.5%,

n=34). Followed by the ranges of 26-50% (5.3%, n=2) and 76-100% (2.6%, n=1). There were no participants that saw obese children or adolescents in the 51-75% range.

Four common barriers related to assessing the willingness of parents to change their family's dietary behaviors were presented to participants to find out how frequently they were confronted with these barriers. The responses available for the participants to choose included: never, occasionally, most of the time and all of the time. The first barrier stated: "the parent is not aware there is a problem with their current dietary behaviors." Of the 38 participants, the majority responded occasionally (57.9%, n=22), followed by most of the time (42.1%, n=16). The second barrier stated: "The parent is aware there is a problem, but is not willing to make a change." The majority of participants again responded with occasionally (55.3%, n=21), followed by most of the time (44.7%, n=17). The third barrier stated; "The parent has made attempts in the past that were not successful." The most common response by participants was again occasionally (71.1%, n=27), followed by most of the time (28.9%, n=11). Lastly, the fourth barrier stated: "The parent places blame for their lack of control on what their child eats at school." These responses were again lead by occasionally (78.9%, n=30), followed by most of the time (10.5%, n=4), never (7.9%, n=3) and all of the time (2.6%, n=1).

The amount of formal training received on MI was lead by 12 (31.6%) participants reading about MI, followed by 6 (15.6%) participants who had combined areas of formal training including: reading about MI, watching training films on MI, attending introductory workshops on MI, attending an advanced workshop on MI and receiving formal training on MI in a college curriculum. There were 3 (7.9%) participants

who wrote in information on MI formal training in the other section. These included: a brief lecture in graduate school, sales technique while working in pharmaceutical sales, graduate school or part of some conference or workshop and inservices on MI. There were 2 (5.3%) of participants who attended an introductory workshop, 14 (36.8%) who had no formal training on MI and 1 (2.6%) who did not respond.

## Results

The following are the results of the descriptive statistical analysis of the study's three research questions.

### Research Question 1

“Do pediatric nurse practitioners assess the readiness of parents of overweight or obese children to change their family's dietary behaviors?”

The survey question 16, “Do you use or assess the parent's stage of change or willingness to change when discussing their family's dietary behavior?” assessed research question 1. The responses among the 38 participants are the following: 29 (76.3%) participants responded yes and 9 (23.7%) participants responded no. Chi-square analysis was performed on multiple combinations of the study's demographic variables compared to survey question 16. There was no relationship found between ages of PNPs and their assessment of parent's stage of change or willingness to change when discussing their family's dietary behavior; chi-square results are 3.206 with a p-value of 0.361 and degrees of freedom = 3. There was no relationship found between years of practice as a PNP and their assessment of parent's stage of change or willingness to change when discussing their family's dietary behavior; chi-square results are 4.972 with

a p-value of 0.290 and degrees of freedom = 4. There was no relationship found between the comparison of percentage of overweight patients seen by PNPs and their assessment of parent's stage of change or willingness to change when discussing their family's dietary behavior; chi-square results are 0.817 with a p-value of 0.845 and degrees of freedom = 3. There was no relationship found between the comparison of percentage of obese patients seen by PNPs and their assessment of parent's stage of change or willingness to change when discussing their family's dietary behavior; chi-square results are 1.387 with a p-value of 0.708 and degrees of freedom = 3. No relationship was found between PNP's BMI and their assessment of parent's stage of change or willingness to change when discussing their family's dietary behavior; chi-square results are 4.781 with a p-value of 0.189 and degrees of freedom = 3. There was no relationship found with PNP's type of practice setting and their assessment of parent's stage of change or willingness to change when discussing their family's dietary behavior; chi-square results are 1.406 with a p-value of 0.843 and degrees of freedom = 4. No relationship was found with the other category for the PNP's practice settings and their assessment of parent's stage of change or willingness to change when discussing their family's dietary behavior; chi-square results are 9.313 with a p-value of 0.593 and degrees of freedom = 11. Lastly, no relationship was found when comparing the number of patients seen by PNPs daily and their assessment of parent's stage of change or willingness to change when discussing their family's dietary behavior; chi-square results are 2.930 with a p-value of 0.891 and degrees of freedom = 7. These chi-square results all conclude there is no significant relationship between any of the tested variables.



## Research Question 2

“Do pediatric nurse practitioners use validated motivational methods such as “motivational interviewing” to assess the readiness of parents of overweight or obese children to change their family’s dietary behaviors?”

The survey question 17, “Do you use the methods of motivational interviewing when assessing the willingness of parents to change their family’s dietary behaviors?” assessed research question 2. Twenty (52.6%) participants responded yes and 17 (44.7%) responded no, while one participant (2.6%) did not provide a response. Chi-square analysis was performed on multiple combinations of the study’s variables compared to survey question 17. There was no relationship found comparing ages of PNPs and their use of the methods of motivational interviewing when assessing the willingness of parents to change their family’s dietary behaviors; chi-square results are 4.086 with a p-value of 0.665 and degrees of freedom = 6. There was no relationship found comparing years in practice as a PNP and their use of the methods of motivational interviewing when assessing the willingness of parents to change their family’s dietary behaviors; chi-square results are 4.183 with a p-value of 0.840 and degrees of freedom = 8. No relationship existed when comparing the percentage of overweight patients seen by PNPs and their use of the methods of motivational interviewing when assessing the willingness of parents to change their family’s dietary behaviors; chi-square results are 4.065 with a p-value of 0.668 and degrees of freedom = 6. There was no relationship found when comparing the percentage of obese patients seen by PNPs and their use of the methods of motivational interviewing when assessing the willingness of parents to change their family’s dietary behaviors; chi-square results are 1.966 with a p-value of 0.923 and

degrees of freedom = 6. The PNP's BMI and their use of the methods of motivational interviewing when assessing the willingness of parents to change their family's dietary behaviors showed no relationship; chi-square results are 3.024 with a p-value of 0.806 and degrees of freedom = 6. There was no relationship found with the type of PNP practice setting and their use of the methods of motivational interviewing when assessing the willingness of parents to change their family's dietary behaviors; chi-square results are 6.213 with a p-value of 0.623 and degrees of freedom = 8. In the other category for PNP practice settings compared to their use of the methods of motivational interviewing when assessing the willingness of parents to change their family's dietary behaviors, no relationship was found; chi-square results are 11.532 with a p-value of 0.966 and degrees of freedom = 22. Lastly, no relationship was found with the number of patients seen by PNPs daily and their use of the methods of motivational interviewing when assessing the willingness of parents to change their family's dietary behaviors; chi-square results are 16.254 with a p-value of 0.298 and degrees of freedom = 14. These chi-square results all conclude that there is no significant relationship between any of the tested variables.

### Research Question 3

“Do pediatric nurse practitioners use methods other than motivational methods to assess the readiness of parents of overweight or obese children to change their family's dietary behaviors?”

Content analysis was to be used to assess for common themes of participant responses to the open ended section of survey question 17. Unfortunately, no participant responded about their use of other methods besides motivational interviewing when assessing the willingness of parents to change their family's dietary behaviors.

## CHAPTER 6

### DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter presents a discussion and interpretation of the study findings and associated research questions in relation to the relevant literature. Limitations, conclusions and recommendations for further research drawn from the data presented in chapter 5 will also be discussed. For ease of presentation the following information is organized by research question.

#### Discussion and Interpretation

##### Research Question 1

The first research question was: “Do pediatric nurse practitioners assess the readiness of parents of overweight or obese children to change their family’s dietary behaviors?” Although the data results are not statistically valid, it was noteworthy that the majority of PNPs (76.3%) responded yes to question 16 on the survey questionnaire. These responses coincide with research question one.

Assessment of patient’s and family’s readiness to make behavior change is one of the Expert Committee’s recommended main purposes of the annual medical history (Krebs, Himes, Jacobson, Nicklas, Guilday & Styne, 2007). It is encouraging to learn the majority of PNPs in this study assess this component of the medical history. However, the PNPs responses are contrary to the research previously discussed that

supports the lack of consistency with current recommendations.

The prevalence of childhood overweight and obesity is continuing to rise, despite improvements to assessment, laboratory evaluations and management guidelines (Small, Anderson, Sidora-Arcoleo & Gance-Cleveland, in press). Small and colleagues (in press) conducted a survey study on two cohorts of PNPs acquired from the 1999 and 2005 NAPNAP conferences. The purpose of this study was to explore the changes in healthcare provider's practice pertaining to the evaluation and treatment of overweight and obese children. Disparities between expert recommendations and practice and perceived barriers to effective treatment were also outlined. Overall, the PNPs reported improvement in assessment, screening and laboratory evaluations from 1999 to 2005, but a reduced commitment to the recommended psychosocial assessments were noted. The recommended psychosocial assessments include assessment of readiness to change (Gottesman, 2003). Implementing the method of motivational interviewing during the intervention or assessment was discussed as a consideration to assist with overcoming parent-associated barriers, increasing parent involvement and motivation to change.

### Research Question 2

The second research question was: "Do pediatric nurse practitioners use validated motivational methods such as "motivational interviewing" to assess the readiness of parents of overweight or obese children to change their family's dietary behaviors?" Again the data results were not statistically valid. Question 17, which coincides with research question two, obtained a smaller number of yes responses (52.6%) compared to research question one. This was interesting considering 60.4% of the participants reported exposure to formal MI training methods including: reading, watching training

films, attending introductory workshops, attending advanced workshops, college curriculum, in-services, sales technique and conferences. As previously discussed there is an abundance of evidenced-based research supporting the success of the use of MI with the assessment and intervention of behavior change. Unfortunately, there is limited research available on the motivational methods such as, “motivational interviewing” used with the assessment of child and adolescent overweight and obesity. Although there were participants in this study who received formal MI training, perhaps they lack the confidence and understanding to utilize these methods.

Soderlund and colleagues (2008) investigated the process of learning and applying MI methods as well as barriers that may contribute or detract achieving competence with these methods. They reported being the first to study this topic. Their evidence to support further research in this area focused on health care personnel’s increased confidence with counseling patients after attending MI training. Also discussed was how patients achieved better results from nurses who participated in more substantial training efforts such as: workshops, regular feedback and coaching, compared to nurses who participated in shorter, one-shot workshops.

Soderlund and colleagues (2008) explored the training and counseling experiences of 20 nurses from 10 primary health care units in Östergötland, Sweden over the course of 1 year. The nurses attended 12 hours of MI training and partook in four follow-up meetings during a period of 6 months. Each nurse conducted around 50 MI focused sessions during the 1 year time period. The data for this study was collected by performing semi-structured interviews with the nurses, which included questions on factors identified as important for effective training and practicing of MI. The results

revealed several factors were crucial to the success of learning and applying MI to practice. These factors included extensive training and close integration of training and practice with the MI skills taught. One specific barrier discussed was the difficulty of adjusting to a new way of thinking when using the MI method. It was mentioned how this approach is different than the authoritarian expert approach, which is more familiar. Some other barriers were the amount of time and effort developing a new frame of mind pertaining to the relationship the nurse experiences with the patient when using methods of MI.

### Research Question 3

The third research question was: “Do pediatric nurse practitioners use methods other than motivational methods to assess the readiness of parents of overweight or obese children to change their family’s dietary behaviors?” Unfortunately, respondents did not write in other methods they use besides the listed motivational methods they selected to assess the readiness of parents of overweight or obese children to change their family’s dietary behaviors. The investigation of research supporting methods, other than MI methods was limited and the SI was interested to learn what other methods were utilized in hopes of conducting further research involving this topic.

The majority of the participants consistently responded with the answer *occasionally* pertaining to the questions regarding the four barriers common to patients and families in the precontemplation and contemplation stages of the TTM. As discussed previously the methods of motivational interviewing are effective with patients and families in the precontemplation and contemplation stages of the TTM. The assumption that younger PNPs, or those completing their degree program within the last 5 years, in

addition to those PNP's with BMIs within normal ranges are more likely to say they use motivational methods to assess willingness to change behavior did not exhibit statistical validity. The possibility these relationships were not statistically significant may have been due to low participant responses.

Currently, national primary care PNP programs focus on educating students on health promotion and maintenance of well and ill children. For example, the goal listed for the PNP program at the University of Nevada, Las Vegas, is to focus on the promotion and maintenance of child and adolescent health within the context of the family and community. An additional emphasis is also placed on the treatment of common problems. This overall goal, along with the accessibility and education of the most recent child and adolescent overweight and obesity guidelines and recommendations could increase the use of motivational assessment methods in younger or newly practicing PNPs. The SI was also interested in gaining further insight on the relationship between provider BMI and the use of motivational assessment methods with parents of overweight or obese children. Conduction of a literature review provided limited research to support this assumption either way.

### Limitations

Sample size (N=38) was a major limitation to this study. The consequence of this was an invalid representation of national pediatric nurse practitioner's responses. Also related to sample size was how the survey questionnaires were printed. It may have been an easier process for the PNP participants to respond by fax if the survey questions were on one-side, instead of being printed on two-sides. Also it may have been easier for

the PNP to use an alternative response system such as a self-addressed return envelope or online system such as survey monkey. An additional limitation was the time of year the survey questionnaires were mailed. There may have been a larger response rate if the survey questionnaires were sent at a different time period than the Thanksgiving and Christmas holidays. This time frame tends to be busy for most people in addition to the busy schedules of working PNPs.

The overall length of the study may also have discouraged people from participating, due to time constraints to complete it. Lastly, question 17 on the survey questionnaire, which correlates with both research questions 2 and 3, may have been confusing to participants because of its format. There were no participant responses to the open ended portion of survey question 17. Participants may have been confused by this option or unaware of what constitutes methods other than motivational interviewing.

### Recommendations

Due to the low response rate of this study, further research needs to be conducted on this topic. Recommendations to increase the response rate would be to over sample by an even greater amount to help provide statistically valid data. Other recommendations would be to include a self-addressed return envelope with postage in the original mailing, use of one-sided surveys, an independent survey or make the survey available through an online system such as survey monkey or a private webpage with a hotlink.

Due to the lack of responses to the open-ended portion of survey question 17, there is a further need for clarification on behalf of the participants. Perhaps if there was a



separate question and list of assessment methods to choose from, there may have been a better response rate. It may be beneficial to conduct further research to examine if relationships exist between PNP assessment methods of overweight and obese children and their families and the PNP's age, BMI, practice setting, patients seen per day and length of practice as a PNP. The TTM and methods of MI have been documented to be effective with assessment and management of dietary behaviors, but their use should also be researched with other barriers associated with childhood obesity. The use of MI methods in the healthcare setting is increasing. It would be valuable to increase research on if and when PNPs and nurses are learning MI methods and their confidence with utilizing these methods. Implementing MI methods as a part of national PNP and nursing program curriculum should be examined to evaluate provider and patient confidence when working with behavior change.

The topic of assessment and intervention methods related to the child and adolescent overweight and obesity epidemic continues to be on the forefront of pediatric healthcare. The number of children and adolescents who are considered overweight and obese continues to rise. There is evidence that supports the importance and increased success of behavior change with parental involvement. It has been determined that one causative behavior of child and adolescent overweight and obesity is unhealthy dietary practices. To help prevent the onset of potentially fatal or life-long physiological and psychological health consequences, the recommended guidelines for assessment of readiness to change pertaining to unhealthy dietary practices should be adhered to.

## APPENDIX A

### TABLES

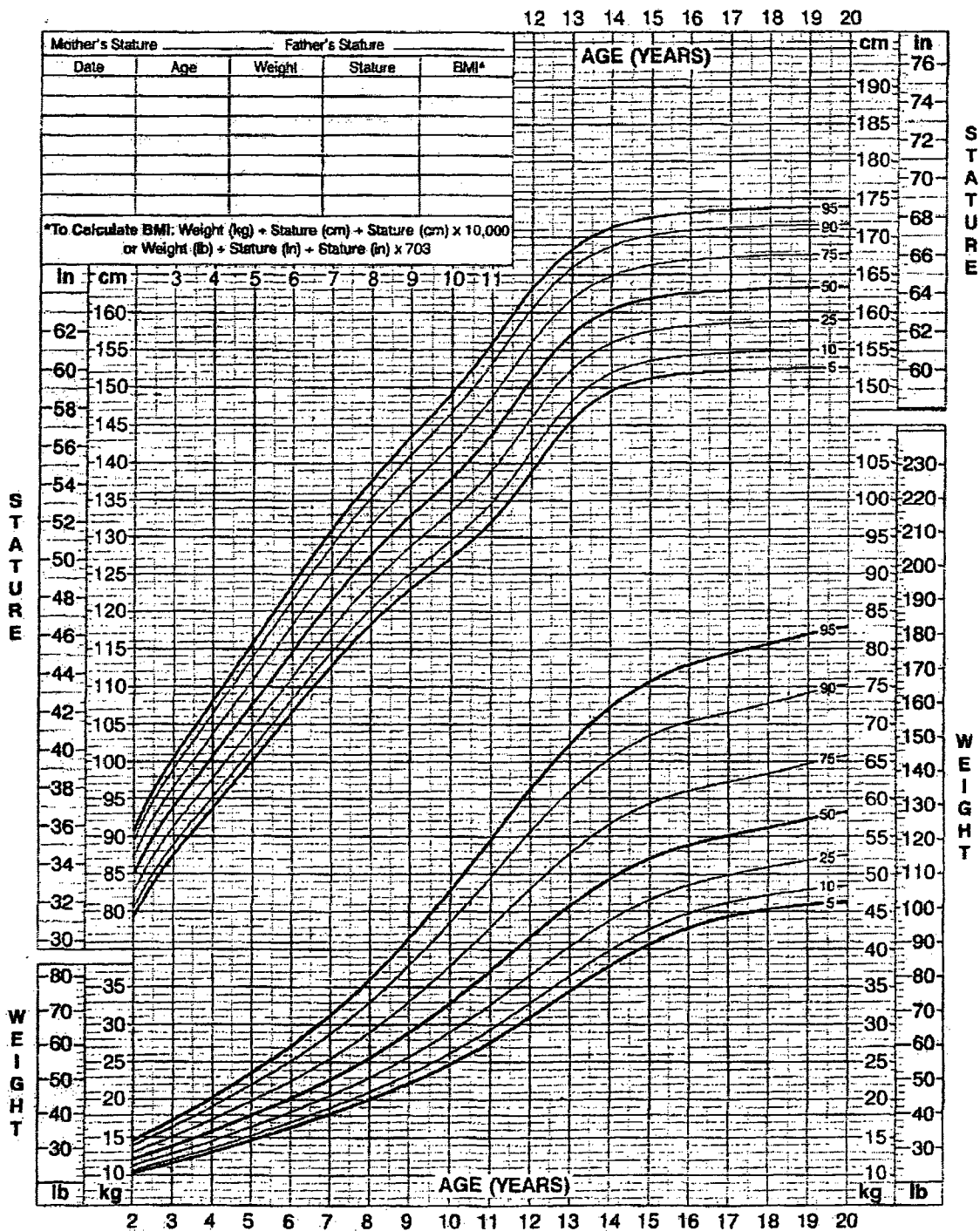




**2 to 20 years: Girls**  
**Stature-for-age and Weight-for-age percentiles**

NAME \_\_\_\_\_

RECORD # \_\_\_\_\_



Published May 30, 2000 (modified 11/21/00).  
 SOURCE: Developed by the National Center for Health Statistics in collaboration with  
 the National Center for Chronic Disease Prevention and Health Promotion (2000).  
<http://www.cdc.gov/growthcharts>



SAFER • HEALTHIER • PEOPLE



## Expert Committee's Classification of Overweight and Obese

<u>Diagnosis</u>	<u>Description</u>
Overweight	Children and adolescents between the ages of 2 to 18 years with a BMI equal to $30 \text{ kg/m}^2$ or greater than or equal to 85 <sup>th</sup> percentile, but less than the 95 <sup>th</sup> percentile on the CDC 2000 growth chart (whichever is smaller).
Obese	Children and adolescents between the ages of 2 to 18 years with a BMI greater than $30 \text{ kg/m}^2$ or greater than or equal to the 95 <sup>th</sup> percentile on the CDC 2000 growth chart.

---

\* (AMA, 2007; Krebs, Himes, Jacobson, Nicklas, Guilday & Styne, 2007).

Expert Committee's Recommended Laboratory Tests Indicated in Assessment of Overweight and Obese Children and Adolescents

<u>Diagnosis</u>	<u>Description</u>
Overweight with no identified risk factors	Obtain a fasting lipid profile.
Overweight with identified risk factors	Obtain a fasting lipid profile, aspartate aminotransferase (AST), alanine aminotransferase (ALT) and fasting glucose.
Obese with or without identified risk factors	Obtain a fasting lipid profile, aspartate aminotransferase (AST), alanine aminotransferase (ALT), fasting glucose, blood urea nitrogen (BUN) and creatinine.

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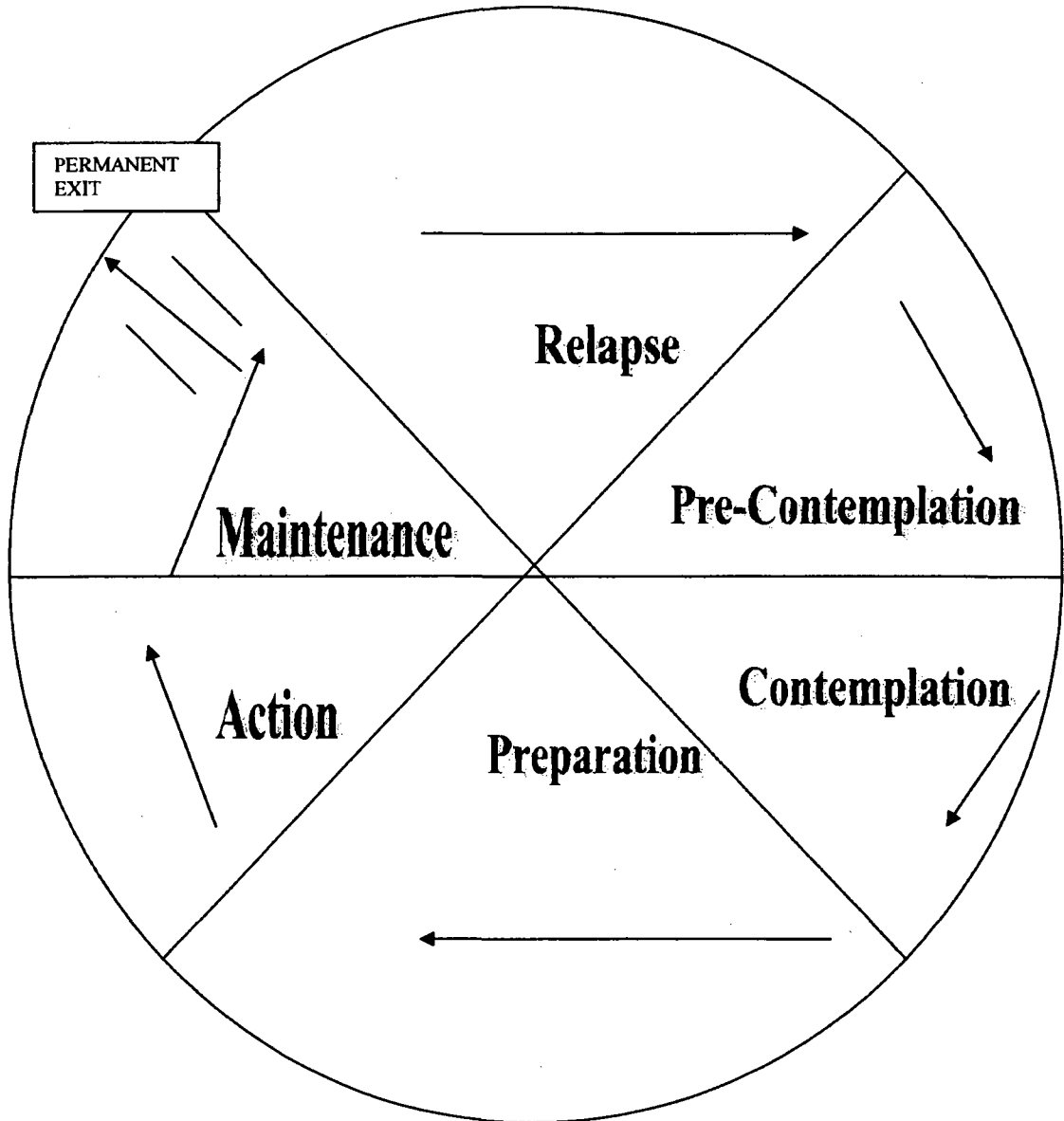
\* (AMA, 2007; Krebs, Himes, Jacobson, Nicklas, Guilday & Styne, 2007)



**APPENDIX B**

**FIGURE**

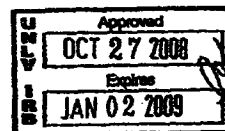
THE PROCHASKA AND DICLEMENTE SIX STAGES OF CHANGE



Note. Adapted from *Motivational Interviewing: Preparing People to Change Addictive Behavior*, by W. R. Miller, and S. Rollnick, 1991. New York: Guilford Press, p. 15

**APPENDIX C**

**APPROVAL LETTER**



## Social/Behavioral IRB – Expedited Review Modification Approved

### NOTICE TO ALL RESEARCHERS:

*Please be aware that a protocol violation (e.g., failure to submit a modification for any change) of an IRB approved protocol may result in mandatory remedial education, additional audits, re-consenting subjects, researcher probation suspension of any research protocol at issue, suspension of additional existing research protocols, invalidation of all research conducted under the research protocol at issue, and further appropriate consequences as determined by the IRB and the Institutional Officer.*

**DATE:** October 30, 2008  
**TO:** Dr. Patricia Alpert, Nursing  
**FROM:** Office for the Protection of Research Subjects  
**RE:** Notification of IRB Action by Dr. J. Michael Stitt, Chair *Office*  
Protocol Title: **Health Care Provider Intervene with Maternal Perceptions of a Healthy Infant**  
Protocol #: 0711-2539

---

The modification of the protocol named above has been reviewed and approved.

#### Modifications reviewed for this action include:

- The addition of Carrie McGrath to the research team.
- Some of the original questions in the survey are modified.
- Six questions are added to the survey.
- Participants will now be asked to fax their completed surveys back to the Nursing department where an administrative assistant will white out any identifying information before the research team receives the completed survey in a manila envelope at the PI's office.

This IRB action will not reset your expiration date for this protocol. The current expiration date for this protocol is January 2, 2009.

#### PLEASE NOTE:

Attached to this approval notice is the official Informed Consent/Assent (IC/IA) Form for this study. The IC/IA contains an official approval stamp. Only copies of this official IC/IA form may be used when obtaining consent. Please keep the original for your records.

Should there be *any* change to the protocol, it will be necessary to submit a **Modification Form** through OPRS. No changes may be made to the existing protocol until modifications have been approved by the IRB.

Should the use of human subjects described in this protocol continue beyond January 2, 2009, it would be necessary to submit a **Continuing Review Request Form 60 days** before the expiration date.

If you have questions or require any assistance, please contact the Office for the Protection of Research Subjects at [OPRSHumanSubjects@unlv.edu](mailto:OPRSHumanSubjects@unlv.edu) or call 895-2794.

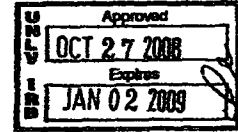
Office for the Protection of Research Subjects  
1505 Maryland Parkway • Box 451040 • Las Vegas, Nevada 89154-1047

**APPENDIX D**

**INFORMED CONSENT**

RECEIVED

OCT 20 2008



Date 11/20/08

Dear Participant,

Ms. Jessica Doolen, Ms. Carrie McGrath (a graduate student) and I are researchers with the School of Nursing (SON) at the University of Nevada, Las Vegas (UNLV). We are asking health care providers to complete a questionnaire related to parental perceptions of their child's weight. Specifically, the purpose of this study is to examine how you intervene with parents of children who may be at risk for or are overweight but the parents are not aware of their children's weight status.

Enclosed is a short questionnaire we are asking you to complete which will take approximately 15 minutes of your time. After completing the questionnaire please return it to us via fax. Our fax number is (702) 895-4807. By completing the questionnaire and returning it to us you have given your informed consent to participate in this study. Your participation is totally voluntary and you may refuse to participate altogether or you may refuse to answer any question or questions without jeopardizing your relationship with UNLV.

We are not tracking who has or has not responded and you are not required to identify yourself on the questionnaire so there is no way in which we can identify you. Your faxed questionnaire will be received by one of our clerical staff who will white out any identifying information before forwarding your questionnaire to us in a sealed manila envelop. Additionally, if the results of this study are published the data will be reported in aggregate form only. The data from your questionnaire will be entered into a data base and the questionnaire will be stored in a locked cabinet at UNLV for three years, after which time it will be shredded.

There is no direct benefit to you as a participant in this study. However, we hope to learn more about how health care providers intervene with parents of at risk for or overweight children. There will be no financial cost to you and there is no compensation for your time but we do appreciate your participation.

There are risks involved in all research studies. This study includes minimal risk. We anticipate that you might feel some stress or discomfort while answering some of the questions. To alleviate this potential stress or discomfort you may choose to not answer the questions that might make you feel uncomfortable or cause you undue stress.

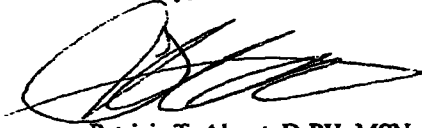
**RECEIVED**

**OCT 26 2008**

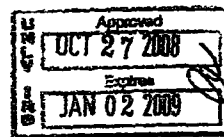
If you have any questions or concerns about this study, you may contact Jessica Doolen at (702) 895-4719. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office for the Protection of Research Subjects at (702) 895-2794.

We would like to thank you in advance for your time and consideration. If you would like the result of this study please feel free to contact Dr. Patricia T. Alpert at [patricia.alpert@unlv.edu](mailto:patricia.alpert@unlv.edu). Again, thank you.

Sincerely,



Patricia T. Alpert, DrPH, MSN, PNP, FNP, APN, BC, FAANP  
Principal Investigator  
UNLV School of Nursing



**APPENDIX E**

**DATA COLLECTION INSTRUMENT**



**SCHOOL OF NURSING  
UNIVERSITY OF NEVADA, LAS VEGAS  
CHILDHOOD OBESITY STUDY**

**Pediatric Nurse Practitioners Willingness to Change Assessment Methods in  
Parents of Overweight or Obese Children**

Directions: Please select one answer choice for each question unless otherwise specified.

For questions 16 – 21 please use the following key:

- **Parent** refers to the primary caregiver of an *overweight* (BMI percentile of  $\geq 85\%$ , but  $< 95\%$  on the CDC 2000 growth chart) or *obese* (BMI percentile of  $\geq 95\%$  on the CDC 2000 growth chart) child or adolescent.
- **Stages of change** refers to Prochaska and DiClemente's theory of behavior change, which depicts the change process through five stages: precontemplation, contemplation, preparation, action and maintenance.
- **Motivational Interviewing** refers to the directive, patient-centered counseling style for eliciting behavior change by helping patients explore and resolve ambivalence, which was first developed by William R. Miller.

16. Do you use or assess the parent's stage of change or willingness to change when discussing their family's dietary behaviors?

- A. Yes
- B. No

17. Do you use the methods of motivational interviewing when assessing the willingness of parents to change their family's dietary behaviors?

- A. Yes
- B. No, and I don't use any specific methods
- C. No, but I use other methods including: \_\_\_\_\_

(Please specify)

18. How much formal training have you received on motivational interviewing?  
(select all that apply)

- A. Read about motivational interviewing
- B. Watched training films about motivational interviewing
- C. Attended an introductory workshop on motivational interviewing
- D. Attended an advanced workshop on motivational interviewing
- E. Received personal coaching from an expert on motivational interviewing

- F. Received formal training on motivational interviewing in my college curriculum.
- G. None
- H. Other \_\_\_\_\_  
(Please specify)

19. In your practice, what percentage of children and adolescents are considered *overweight*? (BMI percentile of  $\geq 85\%$ , but  $< 95\%$  on the CDC 2000 growth chart)

- A. 0%
- B. 25%
- C. 50%
- D. 75%
- E. 100%
- F. Other \_\_\_\_\_  
(Please specify)

20. In your practice, what percentage of children and adolescents are considered *obese*? (BMI percentile of  $\geq 95\%$  on the CDC 2000 growth chart)

- A. 0%
- B. 25%
- C. 50%
- D. 75%
- E. 100%
- F. Other \_\_\_\_\_  
(Please specify)

21. How often are you confronted with the following barriers related to assessing the willingness of parents to change their family's dietary behaviors? (Please circle one number response for each letter)

- A. The parent is not aware that there is a problem with their current dietary behaviors.
  - 1. Never
  - 2. Occasionally
  - 3. Most of the time
  - 4. All of the time
- B. The parent is aware there is a problem, but is not willing to make a change.
  - 1. Never
  - 2. Occasionally
  - 3. Most of the time
  - 4. All of the time

- C. The parent has made attempts in the past that were not successful.
1. Never
  2. Occasionally
  3. Most of the time
  4. All of the time
- D. The parent places blame for their lack of control on what their child eats at school.
1. Never
  2. Occasionally
  3. Most of the time
  4. All of the time
22. How old are you?
- A. 22 – 35 years old
  - B. 36 – 45 years old
  - C. 46 – 55 years old
  - D. 56 and older
23. You practice in which type of setting:
- A. private practice
  - B. community health facility
  - C. school-based clinic
  - D. government facility
  - E. Other: \_\_\_\_\_  
(Please specify)
24. How many patients do you see per day? \_\_\_\_\_
25. What is your height and weight?
- Height: \_\_\_\_\_ Weight: \_\_\_\_\_
26. What is your ethnicity?
- A. Caucasian
  - B. Hispanic
  - C. African American
  - D. Asian
  - E. Other: \_\_\_\_\_ (Please specify)
27. How long have you been in practice as a PNP?
- A. 1-5 years

- B. 6-10 years
- C. 11-20 years
- D. 21-25 years
- E. > 25 years

Thank you for taking the time to complete this survey. If you wish to receive aggregate results of this study please provide the following information:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

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## VITA

Graduate College  
University of Nevada, Las Vegas

Carolyn Leach

### Home Address:

6724 Churnet Valley Ave  
Las Vegas, Nevada 89139

### Degrees:

Associate Degree in Nursing, 2002  
Chippewa Valley Community College

Bachelor of Science, Nursing, 2003  
University of Wisconsin, Eau Claire

### Special Honors and Awards:

Sierra Health Services Fellowship Scholarship, University of Nevada, Las Vegas,  
2007-2008, 2008-2009.

Honor Society of Nursing Sigma Theta Tau International, Zeta Kappa Chapter,  
April 2008 – current.

Advanced Education Nursing Traineeship Scholarship, University of Nevada, Las  
Vegas, June 2008- August 2008, August 2008- May 2009.

Nursing Thesis Award, University of Nevada, Las Vegas, 2008-2009.

Golden Key International Honour Society, November 2008 – current

### Thesis Title:

Advanced Practice Nurses Readiness to Change Assessment Methods in Parents  
of Obese Children

### Thesis Examination Committee:

Chairperson, Dr. Patricia Alpert, Dr.PH., RN  
Committee Member, Dr. Janice Haley, Ph.D., RN  
Committee Member, Dr. Michele Clark, Ph.D., RN  
Committee Member, Cheryl Maes, MSN., RN  
Graduate Faculty Representative, Dr. Chad Cross, Ph.D.